UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 23 1985

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: No Accession No. [RCB No. 828]
PP7E2007: Benomyl in or on Peppers and Eggplants.
An update of RCB's evaluation of PP7E2007 is requested.

TO: H. Jamerson, PM 43
Minor Uses Officer,
Registration Division (TS-767)
and
Toxicology Branch
Hazard Evaluation Division (TS-769)

THRU: Charles L. Trichilo, Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

FROM: R. W. Cook, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

We have been requested to do an "update" on our review of PP7E2007. In support of the "update", Sections B and F submitted 6/9/82 are included. These documents were last reviewed by R. B. Perfetti (7/22/82), receiving a favorable recomendation. The proposals would establish tolerances for combined residues of benomyl and its metabolites containing the benzimidazole moiety (calculated as benomyl) in or on the raw agricultural commodities peppers and eggplants at 5 ppm based upon a proposed field use rate of 0.25 to 0.50 lb. a.i./A or for plant bed application at 0.25 to 0.5 lb. a.i./100 gallons of water. Current tolerances for peppers and eggplants are established to cover greenhouse soil drench use on bedding plants.

However, the Residue Chemistry Chapter for the registration standard for benomyl was completed in Sept. 1984. Several data gaps pertinent to our considerations in regard to peppers and eggplants are noted in the standard, including plant metabolism data, storage stability data, and residue data. The standard has not been finalized by the Agency (commmunication with R.D., P.M. 21, H. Jacoby). We shall address the data gaps identified in the registration standard.

Plant metabolism:

The registration standard states that although the plant metabolism data for benomyl are extensive, they are not adequate because:

1) representation of the metabolism of benomyl in the major raw agricultural commodities was poor;
2) the major means of application (foliar spray) was poorly represented;
3) characterization of conjugated residues was inadequate; and
4) the available data submitted by the registrant are 10-20 years old and do not reflect state of the art methodology.

In order to rectify the data gaps, additional data are required using benzene-ring labeled ^{14}C benomyl in four crops: soybeans, rice, peaches, and sugar beets. Further, the standard proceeds to require further plant metabolism data on a representative crop for each crop group, if the above required ^{14}C-benomyl metabolism data differ significantly between these three crops. (sic)

If TOX Branch can conclude that the incremental increase in risk associated with the proposed tolerance is small and that additional plant metabolism data are not needed to support a conclusion on the safety of the proposed eggplant and pepper tolerances, RCB could also conclude that no additional plant metabolism data are needed at this time. The metabolism questions which have been raised in the standard could be addressed in the registrant's response to the benomyl standard.

Storage Stability Data:

The standard concludes that the storage stability data for peppers was inadequate since samples were stored 9 months and stability studies show some loss of benomyl residue after 3 months. However, no direct data requirement pertinent to peppers or eggplants are specified in standard. We note that extant residue data from field treatment of peppers shows the samples were stored <4 months (Sept 29, 1980 to Jan. 19, 1981). Since the standard concludes that storage stability data are adequate up to 3 months but not for 9 months, we herein conclude that the benomyl standard storage stability data requirement for use on peppers as considered in subject petition is not pertinent, and further, the residue data are considered valid.

Residue Data:

In the Residue Data portion of the benomyl standard, the standard discusses the inadequacies of the extant data.

The tolerances for eggplants and peppers at 0.2 ppm were established in connection with a greenhouse soil drench for protection of bedding plants prior to transplanting.

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The standard then discusses a California intrastate label for the use of benomyl on bell peppers grown for seed and states that aerial and ground application residue data are need for this use.

We reiterate that the residue data supporting the 0.2 ppm tolerance in peppers resulting from use of soil drench application in greenhouse bedding plants are adequate.

In the subject petition at hand, PP7E2007, tolerances for combined residues of benomyl per 40 CFR 180.294 at 5 ppm are proposed as a result of an application to field grown peppers at rates of 0.25 to 0.50 lb. a.i./A. We have previously concluded (K. H. Arne, 6/19/81) that residues of benomyl would not result in residues greater than 5 ppm as a result of the proposed use, provided the use is restricted to bell peppers. The use has been restricted to bell peppers (memo of R. B. Perfetti, 7/22/82).

Provided that TOX concurs with us that no additional plant metabolism data are needed to support the proposed tolerances on peppers, we reiterate our previous conclusion that the existing residue data support the proposed tolerance on peppers.

For the proposed tolerance on eggplants, we reiterate the same conclusion as we have above for peppers and as we have made in our earlier 7/22/82 Perfetti memo.

Recommendation:

Provided TOX concurs that additional plant metabolism data are not needed at this time, we can recommend for the proposed higher tolerance of 5 ppm of combined residues of benomyl and its metabolites containing the benzimidazole moiety (calculated as benomyl) in or on peppers and eggplants as a result of the use proposed in Section B.

cc: R.F., Circu, RWCook, FDA, PP7E2007, TOX, EEB, EAB,
Benomyl Reg. Std. File, PMSD/ISB, Robert E. Thompson.
TS-769:RCB:Reviewer:RWCook:Date:5/16/85:CM#2:RM:810:557-7377
RDI:Section Head:RSQuick:Date:5/21/85:RDSchmitt:Date:5/22/85